



South Coast Air Quality Management District

Engineering & Compliance

*Policies &
Procedures*

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

M E M O R A N D U M

DATE: December 29, 1987
TO: Engineering Division Staff
FROM: William J. Dennison, Director of Engineering /s/ by WJD
SUBJECT: Rule 1110.1 Policy

To assure uniform enforcement of Rule 1110.1 for the installation of all gas-fueled engines greater than 50 BHP, the guidelines outlined below will be followed by Engineering Division Staff:

1. A control plan must be filed by the affected company as required by R1110.1 [R1110.1(c)(3)].
2. The concentration of CO emissions from rich-burn engines must be less than 2000 ppm [R1110.1(c)(1)(B)].
3. BACT is required for all engines [R1303(b)(1)].

Attachment

cc: E. Camarena
C. L. Coleman
A. Stein

November 23, 1987

South Coast Air Quality
Management District Board

Report on Implementation of Provisions of Rule 1110.1 - Emissions From Stationary Internal Combustion Engines

In continuing to review our emissions control programs staff has determined that we can take certain actions with respect to internal combustion engines (I. C. engines) that will result in considerable emissions reductions.

Presently, I.C. engines with rated capacity of 500 BHP or less are exempted from the requirement for a written permit. Engines in the range of 50 to 500 BHP are of concern as they have the potential to violate Regulation XIII provisions with respect to BACT for RHC, NOx, CO, and the offset threshold for NOx. Gas-Fueled engines also have the potential to violate the NOx and CO provisions of Rule 1110.1. Gas-fueled engines of this size range installed before October 1984 emit an estimated 36 tons per day of NOx. For engines installed before October 1984, Rule 1110.1 requires a minimum of 80% NOx reduction for rich-burn engines and 70% NOx reduction for lean-burn engines. All of these engines must meet a compliance schedule that requires the operator to submit a control plan and file an application for permit to construct and operate. The final compliance date is December 31, 1994.

Engines of the 50-500 BHP size range installed after October 1984 as "microcogeneration" units emit about 2.5 tons per day of NOx, but by the end of 1990 these sources alone are projected to emit 70 tons per day of NOx. There will also be an increase of about 6 tons per day of RHC, and 9 tons per day of CO. The reason for the increase is the growth in the number of these sources is due to the economic advantage afforded "small power" producers under the Public Utilities Regulatory Policies Act (PURPA). These projections do not include emissions from other I.C. engines such as diesel-fueled and gas-fueled engines used in non-cogeneration installations.

In order that the District emissions reduction goals are met, I have instructed the Rule Development Division to prepare an amendment to Rule 219 - Equipment Not Requiring a Written Permit Pursuant to Regulation II which would exempt only those engines rated at 50 BHP or less. Also staff will now interpret Rule 1110.1 to require compliance with provisions of the rule for the installation of all gas-fueled engines greater than 50 BHP. As a result, owners shall be required to submit a control plan as provided in Rule 1110.1(c)(3). Rich-burn engines shall not emit CO in excess of 2000 ppm as per Rule 1110.1(c)(1)(B). Any engine installation must also include the use of BACT as required under Rule 1303.

By requiring that new gas-fueled engines be installed with BACT and comply with Rule 1110.1, the District will limit daily emission increases to only about 1 ton of RHC, 14 tons of NOx and 5 tons of CO as compared to the projected daily emissions increases of 6 tons of RHC, 70 tons of NOx and 9 tons of CO. It should be noted, the increase of 70 tons per day of NOx associated with the growth of microcogeneration installations alone is 20% of the 350 tons per day for all stationary source NOx emissions projected for 1990.

Technology for achieving the reductions is available. For gas fueled engines, BACT is (1) use of catalytic reduction, or (2) ultra lean-burn engine modification. As an alternative to the installation of control equipment, an operator may use electric motors. Electric energy, from an emissions point of view, as presently delivered in the South Coast Air Basin by Southern California Edison and the Los Angeles Department of Water and Power, is a lesser-polluting energy source and has a NOx emission factor of about 0.25 lb/MW-hr in the basin. The average NOx emission rates for these engines are about 38 lbs/MW-hr uncontrolled and about 7.6 lbs/MW-hr controlled.

Staff believes that this action reflects reasonable extra effort to control emissions growth and reduce the NOx level to meet the state and federal NO2 standards by the year 1994.

THEREFORE, IT IS RECOMMENDED THAT YOUR BOARD

--Receive and file this Report

Respectfully,
James M. Lents, Ph D /s/ JM Lents
Executive Officer

EC:WJD:JFN:ah